

Name: \_\_\_\_\_

# Air Pollution

By Meg Leonard

Air pollution affects the air we breathe. It is made up of harmful gases, droplets, and particles. These make the air quality poor. Air pollution can make it hard for some people to breathe. People with heart or lung diseases can have trouble breathing when there is a lot of pollution. Many things can cause air pollution. Some air pollution is caused by burning fossil fuels. Oil is used to make gasoline for cars. Cars and trucks produce a lot of air pollution. Coal can give off harmful gases when it's burned. Coal is burned to make electricity.

Renewable resources are not as harmful to the air. Biomass fuels, such as wood, can cause a little air pollution. It does not produce as much as fossil fuels. Some renewable resources do not produce any air pollution. Solar energy, wind energy, and hydropower do not harm the air. Scientists continue to look for cleaner fuels. They hope to lower the amount of pollution in the air.



## Air Pollution

## Questions

- \_\_\_\_\_ 1. Which of the following does NOT make up air pollution?
  - A. rain
  - B. harmful gases
  - C. harmful droplets
  - D. harmful particles
- \_\_\_\_\_ 2. According to the article, what are some causes of air pollution?
  - A. dead animals
  - B. dirty water
  - C. burning coal and oil
  - D. garbage
- \_\_\_\_\_ 3. Which of the following renewable resources can produce some air pollution?
  - A. wind energy
  - B. hydropower
  - C. biomass fuels
  - D. solar energy
- \_\_\_\_\_ 4. How are scientists trying to fix the problem of air pollution?
  - A. They are looking for cleaner fuels.
  - B. They are looking for ways to clean the air.
  - C. They are looking for ways to get rid of energy.
  - D. They are looking for ways to get rid of all fossil fuels.
5. What are some problems caused by air pollution?

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**My Name:** \_\_\_\_\_



**Think it. Draw it! This is a picture of  
a party for Earth. The other planets  
were invited to the party!**



## Recycling

Name a person who is extremely good at reducing, reusing, and recycling materials.

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In my opinion, the easiest thing to remember to recycle is

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In my opinion, the most difficult thing to remember to recycle is

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Where does your family place things to be recycled?

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Someone left an empty container in your room. You've never seen this type of container before. How do you know if it should be thrown out or recycled?

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Draw a picture of four things that can be recycled.



## Earth Day

Come up with an Earth Day resolution for someone in your family. Who is the resolution for? What is the resolution?

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I'm going to tell these three people about Earth Day:

1. 

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2. 

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3. 

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These are ten things I can do to celebrate Earth Day. Rank these activities from least important (1) to the one you think is the most important (10).

- reduce waste
- use less electricity
- reuse something old
- walk or ride my bike
- recycle something
- learn about endangered animals
- plant a tree or garden
- start a compost pile
- pick up litter
- reduce mail



## Light Bulbs

How many light bulbs are in your room?

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Which room in your house has the most light bulbs?

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How many light bulbs are in that room?

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What kind of light bulbs are mostly used in your house? (circle one)

incandescent bulbs

compact fluorescent light (CFL) bulbs

light-emitting diode (LED) bulbs

other: \_\_\_\_\_



## Oops!

Sometimes we don't think about the Earth or maybe we are in a rush. Write three things you have done that you would want to do differently.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

"I like trying to help the Earth, but there is one thing I still don't plan to do." What is it and why don't you want to do it?

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## Our School

What do you do with your school papers after your teacher has graded them and you have shown them to your parents? (circle one)

Throw them in the trash.

Place them in the recycle bin.

We keep all my papers.

other: \_\_\_\_\_

Mr. and Mrs. Fred Earth are coming to your class to talk about Earth Day. Write one question you'd like to ask them.

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Circle all the things that your class does.

recycles paper

turns the classroom lights off when no one is in the room

uses a manual pencil sharper instead of an electric sharpener

keeps windows shut when the school's air conditioner or heater is running

recycles ink cartridges

recycles batteries

Write one thing that you think your class does not do that it should:

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If we had to read one book for Earth Day from one of these topics, I would pick (circle one)

endangered animals

global warming

national parks

gardening



**Trash**

**Eight things that I've put into the trash this week:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_



**Old Things**

**What do you do with the following things?**

your old clothes \_\_\_\_\_

batteries that no longer work \_\_\_\_\_

a pen with no ink \_\_\_\_\_

You have a present for a birthday party you are going to today, but you forgot to buy wrapping paper. What could you do?

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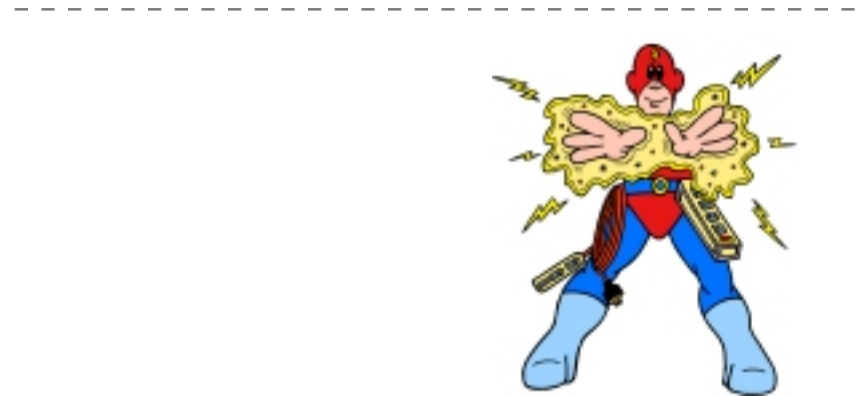
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Five things in my house that we don't need and we should consider how to throw out:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



Eight things in my house that use electricity are:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_



If you lost electricity in your house for the day, what would you miss doing? Write a paragraph.

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Complete this thought: I could use a little less electricity by

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Ask one of your parents to see an old electric bill. How much did your family pay for electricity that month?

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**Reduce your Mail**

Who is sending mail to your family? Look at the mail your family received this week. Write the names of 10 different people or companies that sent your family mail.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

What could your family do to receive less mail? Talk to other members of your family and write down your ideas:

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Thermostat in  
your Home

We keep our home at \_\_\_\_\_ degrees  
Fahrenheit during the day and  
\_\_\_\_\_ degrees  
Fahrenheit while we sleep.



How many gallons of water do you think your family uses in one day?

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How did you estimate that your family uses this much water in one day?  
Show your work:

Name: \_\_\_\_\_

# Ozone Confusion

By Patti Hutchison

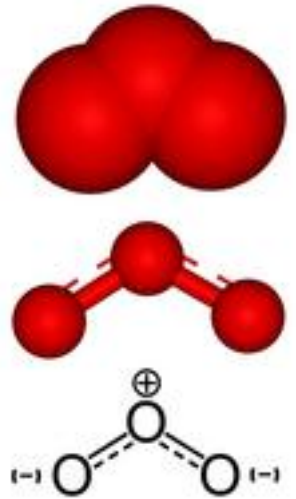
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We often hear about "good" and "bad" ozone. What is ozone, and what makes it good or bad? People are often confused. Ozone is a gas. Good ozone is made of three oxygen atoms joined together. Likewise, bad ozone is made of three oxygen atoms joined together. Ozone can be good or bad according to where it is found. Good ozone is found high above the Earth in the stratosphere. Bad ozone is found close to the ground in the troposphere.

Good ozone is made by nature. It protects all life on Earth by absorbing harmful rays from the sun. This layer is being destroyed, however, by some man-made chemicals. You may have heard about thinning and even holes in the ozone layer. This is very dangerous.

Bad ozone is a form of pollution. When substances such as vehicle exhaust and gasoline vapors mix with sunlight, ozone is formed. Breathing in ozone can cause health problems for people. It can also cause damage to ecosystems and loss of crops.

Ozone is a part of our lives. Together we can help the environment and say, "Out with the bad ozone and in with the good."



## Ozone Confusion

## Questions

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- \_\_\_\_\_ 1. Three oxygen atoms joined make \_\_\_\_\_.  
A. good ozone  
B. bad ozone  
C. both a and b

- \_\_\_\_\_ 2. Good ozone is found \_\_\_\_\_.  
A. high above the Earth  
B. in the troposphere  
C. near the sun

- \_\_\_\_\_ 3. Bad ozone is a form of air pollution.  
A. true  
B. false

4. How does good ozone help us?

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Name: \_\_\_\_\_

Match each pattern to its rule.

13.8, 10.6, 7.4, 4.2

1.9, 5.5, 9.1, 12.7

- 3.8

+ 3.6

2.5, 5.9, 9.3, 12.7

+ 3.2

- 3.1

+ 3.8

+ 3.4

17.2, 13.4, 9.6, 5.8

19.2, 15.3, 11.4, 7.5

3.9, 7.7, 11.5, 15.3

7.1, 10.3, 13.5, 16.7

- 3.9

- 3.2

13.5, 10.4, 7.3, 4.2

Rewrite  $15 - 2$  $\underline{\quad} + \underline{\quad} = \underline{\quad}$ 

On a number line, what is the number that is 9 to the left of 5?

What is the number that is 6 less than 5?

 $18 \div \underline{\quad} = 9$ 

How many minutes are there from 9:30 p.m. until 10:00 p.m.?

 $21 \div 3 = 7$ 

How many hundreds are in the number 180,000?

You need to add what to 77 to get 84?

What is the sum of 5 and 28?

Name: \_\_\_\_\_

# Asthma and Our Environment

By Jennifer Kenny

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Asthma is on the rise. Doctors expect the number of people who suffer from asthma to double in the next twenty years. The rate of those with asthma already went up by 75% for all people between 1980 and 1994. The increase was even more dramatic among young children. Asthma is the number one reason for children being absent from school.

What happens during an asthma attack? Well, something triggers a reaction. Then the bronchi and other airways swell up. The mucus that helps to clean the lungs builds up, gets too thick, and blocks the airways. The muscles tighten. A mild attack makes the asthmatic cough. A more serious attack traps air in the lungs and it becomes impossible to take a deep breath and requires immediate medical help.



So what does asthma have to do with our environment? Many of the triggers for asthma attacks are in our environment. In fact, researchers are calling for a war on asthma that focuses on environmental triggers. Our environment is the world around us. This includes the indoors and outdoors.

What in our environment can be a factor for asthma? **Air pollution** is one example. There are documented cases of industrial incidents where many people became sick or died after being exposed to polluted air. Sufferers of asthma are more vulnerable to air pollutants. **Sulfur dioxide** is an air pollutant released when heat and electricity are produced. Asthma sufferers can be very bothered by sulfur dioxide. **Ozone** is a pollutant produced because of the sun's action on automobile exhaust. It makes the lungs more susceptible to air pollutants. **Nitrogen dioxide** is produced in explosives manufacturing, when fertilizers are placed on lawns or crops, and by cigarette smoking. Nitrogen dioxide causes the bronchi in the lungs to constrict, or get smaller.

When there are alerts, asthmatics should pay attention. They may want to stay indoors. They should not exercise outside when ozone levels are high. Medication might have to be changed to adjust to these conditions.

The weather in our environment may affect asthmatics as well. Some may be bothered by rain or fog. Some may be bothered when it is dry and windy. Individuals should become aware of what bothers them.

The environment inside the house may contain triggers for asthmatics. In fact, people spend most of their time indoors. Allergens are the most common triggers. What's inside your home that might be considered an environmental trigger? Are there pets, carpeting, cockroaches, dust mites, mold, or secondhand smoke?

What can asthma sufferers do to alter the environment? It all depends on what triggers their individual asthma attacks. For example, if there is an allergy to pollens, limit outdoor exposure. If the triggers are mainly indoors, the focus is slightly different. Asthmatics should not smoke. They should not be exposed to secondhand smoke either. Central air is helpful. Damp dusting, wet mopping, and vacuuming are essential. Install air filters in heating systems. Utilize HEPA air filters to remove the smallest particles in the air. Wash sheets regularly. If mold is present, it should be cleaned with chlorine bleach and water. If something has been damaged by mold, it should be thrown out. Sticky traps should be used to catch cockroaches.

Obviously, environment plays an important role in asthma. It is essential that symptoms be prevented by identifying triggers in the environment. In this case, it is certainly true; an ounce of prevention is worth a pound of cure.

Name: \_\_\_\_\_

Asthma and Our Environment

## Questions

- \_\_\_\_\_ 1. Doctors expect the number of asthma sufferers to \_\_\_\_\_ during the next twenty years.
- A. quadruple
  - B. double
  - C. triple
- \_\_\_\_\_ 2. An asthma attack can be mild or severe.
- A. true
  - B. false
- \_\_\_\_\_ 3. \_\_\_\_\_ means the world around us.
- A. Asthma
  - B. Pollution
  - C. Environment
- \_\_\_\_\_ 4. Which air pollutant is produced as a result of the production of electricity?
- A. ozone
  - B. nitrogen dioxide
  - C. sulfur dioxide
- \_\_\_\_\_ 5. All asthmatics are affected by rainy weather.
- A. false
  - B. true
- \_\_\_\_\_ 6. Environmental triggers for asthma attacks can only be found outdoors.
- A. true
  - B. false
- \_\_\_\_\_ 7. Which is not considered a traditional asthmatic trigger in our environment?
- A. secondhand smoke
  - B. mold
  - C. pollen
  - D. HEPA

In the number 333,912,222,463, the digit 9 is in what place?

Add the correct end punctuation for this sentence.

My favorite kind of breakfast burrito is sausage and cheese

$$\begin{array}{r} 48 \\ + 23 \\ \hline \end{array}$$

How far do you think it is from the ground to your chin? Write an estimate of the distance you think it could be.



Name: \_\_\_\_\_

Mrs. Lewis's class is raising money for needy people during May.

Anna saved a dime for each day of the month to donate.

Billy saved a nickel each day. Who collected more money? By how much more?

April has a messy desk. She has a total of 48 markers, pens, and pencils.

She has 4 times as many markers as pens.

She also has 6 more pencils than pens.

How many pencils does she have?

A book has 6 pages. Each page has 12 dimes. How many dimes in the book?

Is 41 a composite or a prime number?

If you exchange 100 dimes for dollars, then how many dollars would you get?



Name: \_\_\_\_\_

# It's Free!

By Mary Lynn Bushong

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*Caption: The founder of Freecycle, Deron Beal. Photo: Jimmy Boegle, .  
Tucson Weekly.*

What makes birthdays fun? The cake, ice cream, and games are nice, but what do most people like best? Why, the presents, of course!

We all like getting something for free. Did you know that sometimes you can get something for free even when it's not a special day? That is what Freecycle is for.

What is Freecycle, you ask? It is an online network where people can post messages listing things they want to get or give away. Another person on the e-mail list might have something that is wanted and be willing to give it. Others might want an offered item.

The whole idea came about with Deron Beal in Tucson, Arizona. He was tired of seeing still-useful items being thrown away and taking up space in the dump. On May 1, 2003, he contacted several friends to let them know he had set up the Freecycle Network. At first, he worked with a small non-profit recycling group called RISE.

In the beginning, members would contact local non-profit groups to see if they could use specific recycled items. That took a lot of time and gasoline. There had to be a more efficient way.

Beal came up with the idea of setting up an e-mail list for people wanting to take part in reducing waste in their community. He made it open for anyone in Tucson.

Freecycle was an idea whose time had come. The idea quickly spread. It's used all across the United States now and in 110 countries around the world. It has been estimated that 1,000 tons of recyclable and still useful materials are kept out of landfills every day!

When someone posts a message to their local Freecycle e-mail list to offer something, they must give it away. They may not charge anything for it. The goals are to keep usable things out of landfills and also to get people to give to their community.

What kinds of things are offered on Freecycle? Just about anything you can imagine. If you need plants or rocks for landscaping, you can probably find them there. You can probably find just about anything to furnish a house or apartment. Things like dishes, cutlery, beds, sheets, blankets, and curtains may be offered. Many appliances are often listed by Freecycle members.

Even pets, electronics, and cars are sometimes offered. If your parents join, they might not get everything they want or need, but they can probably make a good start.

Since its quiet beginning in 2003, Freecycle has grown into a huge network. It encourages people to not only re-use and recycle, but also to give. It's no wonder that Freecycle's motto is "Changing the world one gift at a time."



Name: \_\_\_\_\_

It's Free!

## Questions

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- \_\_\_\_\_ 1. Freecycle is a network for getting or giving free stuff.  
A. true
- \_\_\_\_\_ 2. It was started by Deron Beal in \_\_\_\_\_.  
A. 2002  
B. 2001  
C. 2000  
D. 2003
- \_\_\_\_\_ 3. Freecycle helps people to recycle things rather than send them to a \_\_\_\_\_.  
A. landfill  
B. bank
- \_\_\_\_\_ 4. The first state to have Freecycle was \_\_\_\_\_.  
A. California  
B. Texas  
C. New Mexico  
D. Arizona
- \_\_\_\_\_ 5. How many other countries besides the U.S. have Freecycle now?  
A. 50  
B. 25  
C. 110  
D. 100
- \_\_\_\_\_ 6. How many tons of material does Freecycle help keep out of landfills every day?  
A. 500  
B. 100  
C. 1,000  
D. 50
- \_\_\_\_\_ 7. What kinds of things can you get on Freecycle?  
A. furniture  
B. clothes  
C. electronics  
D. all of the above
- \_\_\_\_\_ 8. Freecycle is only for non-profit groups to use.  
A. true  
B. false

Name: \_\_\_\_\_

Multiply

$7 \times 5 =$

$6 \times 5 =$

$6 \times 2 =$

$7 \times 0 =$

$8 \times 8 =$

$12 \times 11 =$

$1 \times 5 =$

$10 \times 2 =$

$11 \times 4 =$

$3 \times 3 =$

$12 \times 2 =$

$4 \times 10 =$

$9 \times 6 =$

$6 \times 4 =$

$9 \times 1 =$

$5 \times 11 =$

$7 \times 11 =$

$10 \times 4 =$

$9 \times 0 =$

$9 \times 12 =$

$3 \times 2 =$

$10 \times 8 =$

$3 \times 4 =$

$6 \times 12 =$

$9 \times 8 =$

$7 \times 9 =$

$8 \times 3 =$

$0 \times 10 =$

$11 \times 2 =$

$12 \times 7 =$

$10 \times 3 =$

$11 \times 4 =$

$1 \times 12 =$

$5 \times 9 =$

$3 \times 6 =$

$2 \times 7 =$

$2 \times 8 =$

$5 \times 10 =$

$5 \times 4 =$

$0 \times 12 =$

$11 \times 5 =$

$6 \times 7 =$

$4 \times 8 =$

$11 \times 6 =$

$9 \times 10 =$

$5 \times 2 =$

$7 \times 6 =$

$7 \times 12 =$

$9 \times 1 =$

$9 \times 4 =$

$3 \times 3 =$

$8 \times 10 =$

Name \_\_\_\_\_

# Rachel Carson, Environmentalist

Answer the following questions **BEFORE** you read this book.  
Write what you know. If you want to guess, you can. You will **NOT**  
be marked wrong!

**1. What is an environmentalist?**

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**2. What are pesticides?**

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**3. Do you think chemicals are safe to use on  
our lawns, food crops, and fruit trees?  
Why or why not?**

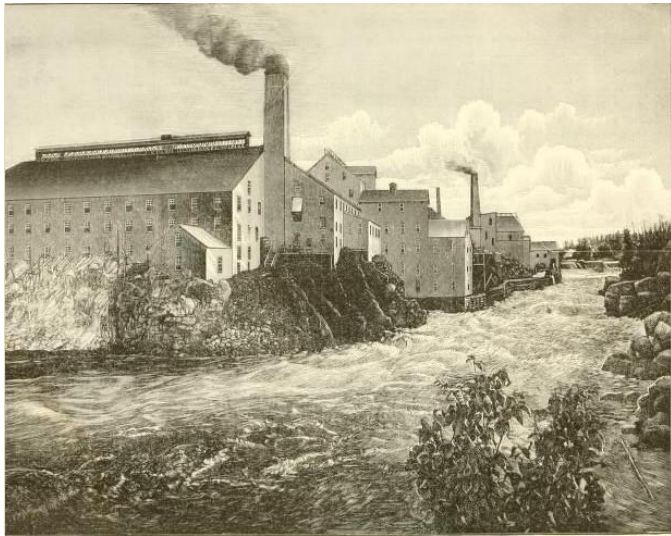
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In the late 1700s, the Industrial Revolution began causing great changes in the world. New machines were invented. They could make thread and cloth faster than ever before. Other machines were invented to do other jobs. Factories were built. Many people left their family farms to move to the cities where they could work in factories. Cities grew bigger.



Factories often used coal or oil for fuel. These natural resources are called fossil fuels. Burning fossil fuels created a lot of pollution. Factory smoke stacks sent black clouds of smoke up into the air. Polluted air caused people to become ill.



Dirty water filled with harmful chemicals drained into rivers and streams. The polluted water wound up in our oceans.



Then in the 1900s, cars were built. Many people bought cars, and factories began making more and more of them. Car engines burn gasoline. Gasoline is another fossil fuel. Cars, trucks, and buses pollute the air, too. As time passed, so many car engines caused a lot of air pollution.



At the same time, the population of the Earth was growing faster than ever before. More and more factories were being built to provide goods for more people. More and more people were living in the same amount of space.





By the middle 1900s, pollution was a big problem. People suffered from lung diseases caused by breathing polluted air.

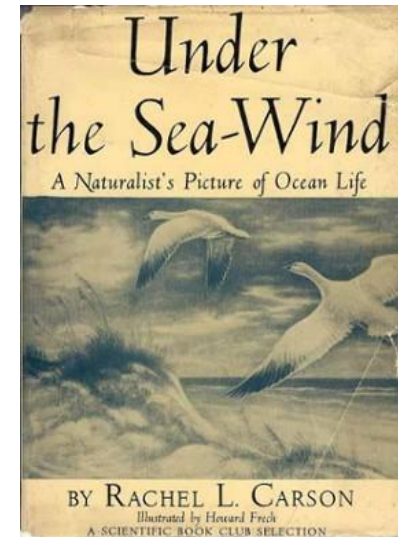


Water in some lakes and rivers was unsafe to drink. Some rivers and lakes were so polluted that people couldn't swim in them anymore.

Fish died. Birds that ate fish died. Many Americans were worried about the Earth and the health of humans and animals.

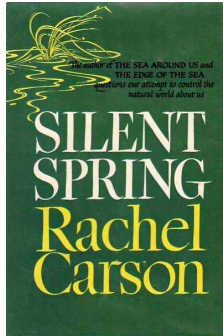


Rachel Carson saw these problems, and she decided to do something about them. Rachel was born on May 27, 1907. When she was a child, she and her mother spent many happy hours outdoors discovering nature. Rachel loved reading, too. She began writing her own stories at the age of eight. She had her first story published at age eleven. After she grew up, she wanted to protect the natural world. Rachel went to college and became a biologist.



Rachel worked to protect the environment, the natural world, from pollution. She wrote books, too, to tell people about the natural world.





Rachel's most famous book is *Silent Spring*. Rachel's book said that poisons like DDT were being sprayed on fields and water standing in roadside ditches. These poisons build up in plants and animals. Rain washes the chemicals into rivers and lakes. Fish become sick. Then birds eat the fish and get sick, too. Rachel warned of a silent spring without bird songs. Her book told people that these poisons hurt living things. She said that people should be careful how they used them.



Her book *Silent Spring* pointed out how all living things are connected. The book told people that the use of harmful pesticides was threatening the balance of nature and all life. The bald eagle, our national bird, was affected by DDT. The poison ran off into streams got into fish. When eagles ate the fish, the poison affected their eggs. No new eagles were able to hatch. The bald eagle was heading toward extinction. Less than five hundred of them still lived in the wild.



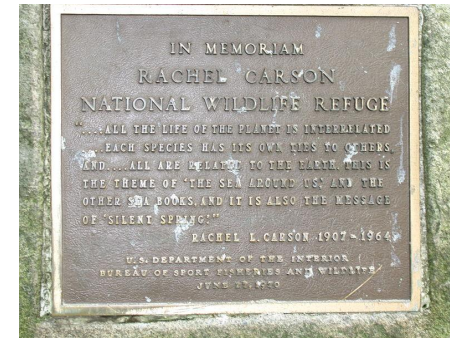
When *Silent Spring* came out in 1962, many people read it. They were shocked to know about the damage that was being done. Her words made people think. How would poisons in our water affect human health?



Chemical companies attacked Rachel and her work. They tried to tell the public that Rachel's findings were incorrect. They said she was a troublemaker. President John Kennedy asked a panel of scientists to look into Rachel's claims. They found her to be correct. Rachel testified before Congress in 1963. She asked that the use of harmful insecticides and pesticides be regulated by law.



Thanks to Rachel's work, other people wanted to help the Earth, too. They asked Congress to do something. The Environmental Protection Agency (EPA) was formed. The EPA's job is to make sure that people obey laws that have been passed to keep our air, soil, and water clean. The use of DDT and other dangerous pesticides has been nearly banned in the United States.



Rachel Carson has been said to have started the environmental movement. Environmentalists are people who try to protect the environment. They work to protect air, water, soil, animals, plants, and other natural resources from pollution and its effects. Sadly, Carson did not live to see the effects of her words. She died of cancer on April 14, 1964. This was less than two years after *Silent Spring* came out. She was only fifty-six years old. A national wildlife refuge in Maine was named in her honor. Rachel Carson is often called the mother of the modern environmental movement.



Earth Day began in 1970. In the United States and many other countries, Earth Day is April 22. This holiday is devoted to making our Earth cleaner and healthier. Fairs, speeches, and rallies take place. People come together to help the Earth. On Earth Day, people plant trees, clean up rivers and beaches, or find other ways to help the planet.



This is just what Rachel Carson would have wanted them to do.

Name \_\_\_\_\_

# Rachel Carson, Environmentalist

Answer the following questions **AFTER** you have completed this book.

1. Rachel Carson went to college to become what? Circle your answer.

**a writer**

**a poet**

**an environmentalist**

**a biologist**

a government lobbyist

2. Rachel Carson is often called the mother of the \_\_\_\_\_ movement.

- 3.** Rachel's book *Silent Spring* pointed out how all living things are

- #### 4. Rachel's work led to what government agency being created?

5. Explain in your own words what effects the use of the chemical DDT had on bald eagles.

[illegible]

[illegible]